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EXPLANATION OF PLATE 12.

The bones of the limbs are marked as in Plate 11. F, *Femur*, or thigh bone; T, *Tibia*; Fi, *Fibula*; Pa, *Patella*, or knee-pan; Ha, *Halter*, or great toe; H, *Humerus*, or arm bone; O, *Olecranon process* of elbow; U, *Ulna*; R, *Radius*; Po, *Pollex*, or thumb; Hd, *Head of Humerus*, or *Femur*.

Fig. 1. Bones of human leg, right side; the knee looks forward.

Fig. 2. Bones of human leg, right side; in the position in which Vicq d'Azyr began his comparison; the elbow looks backward, and the forearm is in pronation, the radius being crossed upon the ulna so as to leave the thumb on the inner side. (This and the three following figures are to be supposed *behind* Fig. 1, in order to be compared with it.)

Fig. 3. Right arm turned half way round so as to face the elbow forward like the knee; the hand remains as before, so that the forearm is untwisted, or supinated. The head of the Humerus now faces in the opposite direction to that of the Femur.

Fig. 4. Bones of *left* arm; all the parts agree with the leg except the thumb, which now comes on the *outer* side: this is as Vicq d'Azyr left it.

Fig. 5. This illustrates the comparison of Turenne. The upper parts of the limb are of the left arm as in Fig. 4; but the hand has been cut off and replaced by the right hand as in Fig. 3.

Fig. 6. Diagram of human foetus, showing the rudiments of limbs.

 REVIEWS.

MANUAL OF THE BOTANY OF THE NORTHERN UNITED STATES, INCLUDING THE DISTRICT EAST OF THE MISSISSIPPI AND NORTH OF NORTH CAROLINA AND TENNESSEE. Arranged according to the Natural System. By *Asa Gray*, Fisher Professor of Natural History in Harvard University. Fifth Edition. With twenty-five plates, illustrating the Sedges, Grasses, Ferns, &c. New York: Ivison, Phinney, Blakeman, & Co. Chicago: S. C. Griggs & Co. 1867. pp. 701. [Not including the Mosses and Liverworts, nor the "Garden Botany."]

This new edition of the "Manual of Botany" is the result of the author's continuous desire to improve and make more perfect an early one (published in 1848) "hastily prepared to supply a pressing want."

In the second edition, which appeared in 1856, 2,426 species of Flowering Plants, and the higher Cryptogams, or flowerless plants, were described. In the third and fourth editions species new to science, or newly discovered within our limits, were given in *addenda*, with such alterations in the stereotype plates as were possible. The present edition (almost entirely rewritten) is printed from new stereotype plates, and in it are described 2,634 plants of the Phænogamous and the higher Cryptogamous series; an increase in number of 208. In accounting for so great an increase, we find that 308 out of the whole number are introduced species, being forty-eight more than in the former edition; thirty or forty have hitherto been considered as varieties (or as included in other species), or are new species, and the remainder have been newly discovered within the geographical limits of the work, and, as might be supposed, occur mostly on the borders of the area treated of.*

The most important changes which we notice are the combination of *Nelumbiaceæ*, *Cabombaceæ*, and *Nymphæaceæ* proper as suborders of *Nymphæaceæ*; *Arenaria* is understood as comprising the (sub)genera *Honkenya*, *Alsine*, *Mœhringia*, and *Arenaria*; *Limnanthaceæ*, *Balsaminaceæ*, *Oxalidaceæ* and *Geraniaceæ* proper are now considered as suborders of *Geraniaceæ*; *Saxifragaceæ* is made to include *Grossulariaceæ* and *Parnassiaceæ*; *Holoragææ*, previously merged in *Onagraceæ*, now takes rank as a distinct order; and *Loganiaceæ* has been removed from *Rubiaceæ* to its place between *Gentianaceæ* and *Apocynaceæ*. *Calluna vulgaris* is regarded as a native plant. Our species of *Cuscuta* are described for the "Manual," by Dr. George Engelmann, of St. Louis, Mo.; the name *Lindera* has to be substituted, by the inexorable rule of priority, for the familiar one of *Benzoïn*; the genera *Callitriche* and *Euphorbia* have been carefully reëlaborated, as to our species, by Dr. Engelmann, for this edition; the *Cupuliferæ* and *Betulaceæ* have been thoroughly overhauled; the genus *Lemna* has been carefully revised with the aid of notes contributed by Mr. C. F. Austin, and the genus *Wolffia* (represented by *W. Columbiana*)† is now for the first time indicated in a Handbook of Botany, as found in America, though discovered many years ago by Dr. Robbins, who has now monographed anew our species of *Potamogeton*. *Habenaria* is now introduced as including all our species of *Platanthera* and *Gymnadenia*; *Spiranthes*

*The species which are described as new are *Lechea Novæ-Cæsaræ*, *Polygala Curtisii*, *Sium Carsonii*, *Aster Herveyi*, *Lobelia Canbyi*, *Pyrola oxypetalæ*, *Hydrolea affinis*, *Callitriche Austini*, *Lemna Torreyi*, *Potamogeton Oakesianus*, *P. Vaseyi*, *Spiranthes simplex*, *Pogonia affinis*, *Juncus Smithii*, *J. Vaseyi*, *J. asper*, *Cyperus Lancastriensis*, *Scirpus Smithii*, *Aristida ramosissima*, *Avena Smithii*, *Isoetes Tuckermanni*, and *I. saccharata*.

†Dr. Engelmann has discovered very recently a second (European) species, *W. arrhiza*, on ponds near St. Louis, Mo.

has undergone changes for the better, and *S. Romanzoviana*, hitherto identified only on the western slopes of North America, where it was long ago found by Chamisso, and at the single station of Bantry Bay, Ireland, is found to be present in the northern part of our region. *Liliaceæ* now includes *Melanthaceæ* and *Trilliaceæ*, and the genus *Narthecium*, and the *Junci* have undergone a careful and critical revision at the hands of Dr. Engelmann. Much laborious study has been given to the *Cyperaceæ*, and we see the number of *Carices* raised from one hundred and thirty-two to one hundred and fifty-one; the Ferns have been contributed by Professor D. C. Eaton, of Yale College, who has introduced a few changes which we are glad to see, as with *Pellæa* and *Allosorus*, *Polypodium* and *Phegopteris*, and the species of *Botrychium*. The account of our species of *Isoetes* has been contributed by Dr. Engelmann, who has given them much careful study, and who characterizes within our area seven species, while there are two more in the Southern, and three more in the Pacific States.

We are glad to see the promise of a "simpler and more elementary work," which will include the "Garden Botany" of the last edition, and more, and "designed especially for school instruction, and for those interested in cultivation,—entitled *Field, Forest, and Garden Botany*." We shall also look with eagerness for a supplementary volume, to contain the *Mosses* and *Liverworts*, newly elaborated we suppose, and the "*Lichens*, if not all the other orders of Lower Cryptogamia." Above all we congratulate Botanists that there is a prospect of the issue, before many years, of a somewhat similar Flora of the whole national domain.

The addition of six beautiful new plates (in the admirable workmanship of Mr. Isaac Sprague), of the genera of *Cyperaceæ*, is an important item to the beginner, and even to those more thoroughly versed in Botany. Every one will be pleased with the slight changes in the typographical execution and arrangement of the work.—H. M.

NATURAL HISTORY MISCELLANY.

BOTANY.

Botanical Notes and Queries. A recent number of the *Revue Horticole* (Aug. 16, 1867) calls in question the native country of *Sambucus Canadensis* Linn., our common Elder, not only regarding it as a mere variety of the European *S. nigra*,—which it well may be,—but doubting if it be really indigenous to this country. The same doubt had been raised in my own mind. Can any of the numerous readers